

AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph beginning at line 13 of page 2, as follows:

The present invention will now be described, by way of example, with reference to the accompanying drawings, in ~~which~~ which:

Figure 1 is a side-view diagram of a vehicle seat incorporating the frame-based occupant weight estimation apparatus of the present invention.

Figure 2 is a diagram of the electrical components of the apparatus of Figure 1.

Please amend the paragraph beginning at line 6 of page 3, as follows:

The load transfer mechanism 20 is a compliant one-piece device formed of a suitable polymer material. It is similar to compliant pliers, and is a combination of rigid and compliant sections based on cross-sectional area. According to the present invention, the load transfer mechanism 20 translates a portion of the seat load at mounting bracket 12 to a force sensor disposed near the fore-aft midsection of seat 10. The mechanism 20 includes first and second co-joined lever arms 22 and 24. The lever arms 22 and 24 are physically joined at ~~the~~ an active joint 26 and maintained in abutment at a point 28, which effectively constitutes a passive joint. In general, a passive joint is a joint that allows relative rotation between rigid segments (that is, the outboard ends of lever arms 22, 24) without using a pin joint. The rigid outboard ends of the arms 22 and 24 are respectively coupled to the seat mounting bracket 12 (via a pin 32) and the floor bracket 16, and the inboard ends terminate in jaws 34 and 36 that apply a compressive force to a force sensor 40. The force sensor 40 may be a strain gauge device or load cell such as produced and sold by Panasonic Corporation or Texas Instruments Corporation, and develops an electrical output signal functionally related to the force applied to it by the jaws 34, 36.

Please amend the paragraph beginning at line 5 of page 4, as follows:

An overload plate 50 depicted at the left-rear seat mounting bracket 12' limits upward movement of the seat 10 with respect to the floor bracket 16 in the event of a crash. In actuality, overload plates are typically installed at each of the four seat frame mounting brackets, but are omitted in Figure 1 so as not to obscure the load transfer mechanism 20. The plate 50 is anchored on a post 52 formed on floor bracket 16, and has an elongated aperture 54 through which ~~the~~ a pin 26' extends. The pin 26' does not contact the plate 50 in normal operation, but contacts the plate 50 when a strong upward force is applied to seat 10.

Please amend the paragraph beginning at line 26 of page 4, as follows:

In summary, the present invention provides a seat frame-based occupant weight estimation apparatus including a compliant force transfer mechanism that translates vertical force associated with occupant weight to a central location for measurement by a pre-loaded force sensor. While ~~illustrated in~~ described with respect to the illustrated embodiment, it will be recognized that various modifications in addition to those mentioned above may occur to those skilled in the art. For example, the seat 10 may be supported by a greater or lesser number of force transfer mechanisms 20, the force transfer mechanisms 20 may be oriented laterally with respect to the seat 10, and so on. Accordingly, it will be understood that systems incorporating these and other modifications may fall within the scope of this invention, which is defined by the appended claims.